Having thus described the preferred embodiment, the invention is now claimed to be:

1.   A method for classifying pixels into one of a neutral category and a non-neutral category, the method comprising:

inputting a group of pixels within an image into a memory device, a color of each of the pixels being represented by a respective color identifier;

5   determining an average color identifier as a function of the color identifiers of the pixels in the group; and

classifying one of the pixels within the group into one of the neutral category and the non-neutral category as a function of the average color identifier.

2.   The method for classifying pixels into one of a neutral category and a non-neutral category as set forth in claim 1, wherein the inputting step includes:

receiving the color identifiers into the memory device according to a

5   raster format.

3.   The method for classifying pixels into one of a neutral category and a non-neutral category as set forth in claim 1, wherein the classifying step includes:

comparing the average color identifier with a threshold color
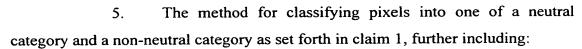
5   identifier function.

4.   The method for classifying pixels into one of a neutral category and a non-neutral category as set forth in claim 1, wherein the classifying step includes:

determining if the average color identifier corresponds to one of a

5   plurality of neutral colors.

5.   The method for classifying pixels into one of a neutral category and a non-neutral category as set forth in claim 1, further including:

if the pixel within the group is classified to be in the neutral category, rendering the pixel as one of a plurality of neutral colors; and

5   if the pixel is classified to be in the non-neutral category, rendering the pixel as one of a plurality of non-neutral colors.

6.   The method for classifying pixels into one of a neutral category and a non-neutral category as set forth in claim 1, further including:

producing an output of the pixels within the group.

7.   The method for classifying pixels into one of a neutral category and a non-neutral category as set forth in claim 6, wherein the producing step includes:

for each of the pixels within the group, printing a color associated

5   with the average color identifier via a color printing device.

8.   The method for classifying pixels into one of a neutral category and a non-neutral category as set forth in claim 1:

wherein the color identifiers include components of a first color space, the method further including:

5   before the determining step, transforming the first color space components of the color identifiers to a second color space;

wherein the classifying step includes:

comparing the average color identifier in the second color space with a threshold color identifier in the second color space, the

10   threshold color identifier being determined as a function of a position along a neutral axis in the second color space.

9.   A system for detecting neutral colors, comprising:

an input device for inputting data associated with an image;

a buffer memory for receiving and storing portions of the image data; and

5   a processing unit for averaging groups of the image data, determining if the respective groups represent one of a neutral and non-neutral color, and identifying one of the pixels within the respective groups to being one of a plurality of neutral and non-neutral colors.
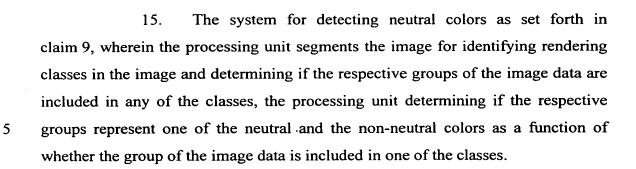
10.   The system for detecting neutral colors as set forth in claim 9, wherein the processing unit transforms all of the image data within a respective group into a color space capable of forming neutral colors from both a combination of non-neutral colorants and a neutral colorant, the processor

5   rendering the image data within the groups identified as being one of the neutral colors using only the neutral colorant and rendering the image data within the groups identified as one of the non-neutral colors using the combination of the neutral and non-neutral colorants.

11.   The system for detecting neutral colors as set forth in claim 10, wherein the color space is L*C*h*.

12.   The system for detecting neutral colors as set forth in claim 10, further including:
an output device for outputting the rendered image data.

13.   The system for detecting neutral colors as set forth in claim 12, wherein the output device is a color printing device.

14.   The system for detecting neutral colors as set forth in claim 9, wherein the processing unit determines if the respective groups represent one of the neutral and the non-neutral colors by comparing average color identifiers of the respective image data within the groups with a threshold function.

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15.   The system for detecting neutral colors as set forth in claim 9, wherein the processing unit segments the image for identifying rendering classes in the image and determining if the respective groups of the image data are included in any of the classes, the processing unit determining if the respective groups represent one of the neutral and the non-neutral colors as a function of whether the group of the image data is included in one of the classes.

16.   A method for detecting neutral colors, the method comprising:

inputting a group of pixels within an image into a buffer memory, a color of each of the respective pixels being one of a plurality of neutral and a plurality of non-neutral colors;

determining an average color of the group of pixels; and

detecting if the group of pixels represents one of the neutral colors as a function of the average color.

17.   The method for detecting neutral colors as set forth in claim 16:

wherein the inputting step includes:

scanning image data representing the group of pixels into the buffer memory in an RGB color space;

the method further including:

transforming the average color into one of a L*a*b* and a L*C*h* color space;

the detecting step including:

comparing the average color of the one of the L*a*b* color space data and the L*C*h* color space data with a threshold function value, which is determined as a function of L*.

18.   The method for detecting neutral colors as set forth in claim 16, further including:

if the group of pixels is detected as one of the neutral colors, rendering one of the pixels of the group in a CMYK color space using only a neutral colorant; and

if the group of pixels is detected as one of the non-neutral colors, rendering one of the pixels of the group in the CMYK color space using a plurality of colorants forming the CMYK color space.

19.   The method for detecting neutral colors as set forth in claim 18, further including:

outputting the rendered group of pixels to a color printing device.